

REMARKS

Applicant has carefully reviewed and considered the Office Action mailed on July 2, 2003, and the references cited therewith. Claims 39 and 44 are amended such that claims 36-42, 44-47, 49-60 and 62-65 are now pending in this application.

Examiner Interview

Applicant's attorney Andrew Peret would like to thank Examiner Knable for his courtesy during the telephone interview held on July 30, 2003. Examiner Knable and Applicant's attorney, Andrew Peret, discussed the cited references and claims. Examiner Knable indicated that the claims as amended herein overcome the pending § 112 rejection.

Allowable Subject Matter

Claims 37 & 51-57 were allowed.

§112 Rejection of the Claims

Claims 39-42, 44-47, 49-50 & 64-65 were rejected under 35 USC § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Applicant has amended claims 39 and 44 in accordance with suggestions made by the Examiner during the interview conducted July 30, 2003. The amendment does not introduce new matter, and makes express of what was implicit in the claim prior to this amendment. Reconsideration and allowance are respectfully requested.

§103 Rejection of the Claims

Claims 36, 38-42, 44-47, 49-50, 58-60 & 62-65 were rejected under 35 USC § 103(a) as being unpatentable over Fogal et al. (U.S. 5,140,404) in view of Sawamura et al. (U.S. 6,303,219). To establish a *prima facie* case of obviousness, a prior art reference must teach **all** of the claim limitations. (Emphasis added). MPEP § 2143, *In re Royka*, 490 F.2d 981 (CCPA 1974).

Applicant cannot find in either of the cited references:

- i. "affixing a face of the semiconductor die to a second adhesive layer mounted on an opposing side of the carrier layer, wherein the second adhesive layer is a hybrid material having both thermoplastic and thermoset components" as recited in claim 36;
- ii. "affixing a face of the semiconductor die to a second adhesive layer mounted on an opposing side of the polyimide carrier layer, wherein the second adhesive layer is a hybrid material having both thermoplastic and thermoset components" as recited in claim 38;
- iii. "contacting a face of the semiconductor die to a second adhesive layer mounted on an opposing side of the carrier layer, wherein the second adhesive layer comprises a hybrid material having both of thermoplastic and thermosetting components" as recited in claim 39; and
- iv. "contacting a face of the semiconductor die to a second adhesive layer mounted on an opposing side of the polyimide carrier layer, wherein the second adhesive layer comprises a hybrid material having both of thermoplastic and thermosetting components" as recited in claim 44.

Claims 40-42, 45-47, 49-50, 58-60 & 62-65 depend from respective claims 36, 39 and 44 such that these claims incorporate all the limitations of claims 36, 39 and 44. Therefore, Fogal and/or Sawamura do not render obvious claims 40-42, 45-47, 49-50, 58-60 and 62-65 for the reasons provided above with regard to claims 36, 39 and 44.

Notwithstanding the fact that the combination of the references fails to establish all of the elements of the claims, Applicant respectfully submits that the rejection fails to establish a legally sufficient motivation to combine the references. Applicant respectfully submits that the assertion "to utilize such an adhesive for the adhesive for the conventional double sided tape to adhere a semiconductor would therefore have been obvious in light of the expected advantages suggested by Sawamura et al." made on page 3 of the Office Action is a mere conclusory statement that fails to provide any objective evidence that legally establishes a case of obviousness.

According to *In re Sang Su Lee*, "there must be some motivation, suggestion, or teaching of the desirability of making the specific combination that was made by the applicant." *In re*

Lee, 61 USPQ2d 1430 (Fed. Cir. 2002), *citing In re Fine*, 837 F.2d 1071, 1075 (Fed. Cir. 1988). It is respectfully submitted that the assertion as to motivation amounts to a form of Official Notice, which is timely traversed under MPEP 2144.03. Applicant respectfully requests that the Examiner either cite references in support of this position, or provide an affidavit if the Examiner is relying on personal knowledge, as required by 37 C.F.R. § 1.104(d)(2).

Furthermore, the “factual question of motivation is material to patentability, and could not be resolved on *subjective belief and unknown authority*.” (Emphasis Added). *In re Sang Su Lee*, 61 USPQ2d 1430 (Fed. Cir. 2002). The Examiner states at pages 3-4 of the Office Action,

“The reference however is clearly not limited to any particular bonding method (e.g. col. 11, lines 20-28) and even indicates that apparently one or both sides of the carrier film can be operated on ‘as required’ (e.g. col. 15, lines 46-51). Further, Fogal et al. provides clear evidence of an understanding in this art that both one sided and double sided tapes are suitable and effective for the desired bonding (compare figs. 4 and 5), the choice being well within the skill of the artisan and in any event, it would have been apparent that an adhesive suitable for one-sided bonding would have been expected to be suitable for a double sided methodology.” [Emphasis Added.]

Applicant respectfully submits that the Examiner’s conclusion is based on a subjective belief and unknown authority, since no art nor objective teaching was cited. A showing of a suggestion, teaching, or motivation to combine prior teachings “must be clear and particular . . . Broad conclusory statements regarding the teaching of multiple references, standing alone, are not ‘evidence.’” *In re Dembiczak*, 175 F.2d 994, 50 USPQ2d 1614 (Fed. Cir. 1999).

The Examiner acknowledges at page 3 of the Office Action that Sawamura “only explicitly describes tapes in which the adhesive is coated on one side.” As discussed during the interview, Applicant further submits that the tapes disclosed by Sawamura in FIGS. 3 and 5 already include a substrate such that they are not used to bond a substrate to a die.

A factor cutting against a finding of motivation to combine or modify the prior art is when the prior art teaches away from the claimed combination. A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path the applicant took. *In re Gurley*, 27 F.3d 551, 31 USPQ 2d 1130, 1131 (Fed. Cir. 1994); *United States v. Adams*, 383 U.S. 39, 52, 148 USPQ 479, 484 (1966); *In re Sponnoble*, 405 F.2d 578,

587, 160 USPQ 237, 244 (C.C.P.A. 1969); *In re Caldwell*, 319 F.2d 254, 256, 138 USPQ 243, 245 (C.C.P.A. 1963). Applicant respectfully submits that since Sawamura discloses a tape that already includes a substrate (see FIGS. 3 and 5 of Sawamura), Sawamura teaches away from the tapes described in Fogal, which are used to couple a die to a substrate (see FIG. 4 of Fogal).

The Examiner also states at page 5 of the Office Action,

“As to new claims 64 and 65, although Sawamura et al. clearly suggests including thermoplastic and thermosetting components and even describes very specific examples, these are not characterized in terms of their Tg. The reference does however indicate a desire to have a “low temperature short time thermal cure” (col. 3, lines 15-16). Further, the portion of the present specification/description underlying these claims, indicates that

‘[t]he thermoset component of the tape is a material having a low thermal processing requirement. That is, the glass transition temperature (Tg) of the thermoset component is low, allowing the tape to laminate at low or ambient temperature.’

In other words, it would seem that the low Tg for the thermoset is being used as a proxy for a low lamination/cure processing temperature, it being again noted that Sawamura clearly desires a low temperature thermal cure. Selection of a lower Tg thermoset component is thus considered to either implicit or obvious from the reference disclosure of a desire to have a low temperature cure (it being apparent that it clearly is only the thermoset component that is being discussed since the thermoplastic component does not cure).”

Applicant respectfully traverses the assertions since the assertions rely on facts not specifically supported by the references. Applicant notes that the Examiner is relying on a portion of Applicant’s specification instead of the cited references as support for some of the assertions. It is respectfully submitted that the assertions amount to a form of Official Notice, which is timely traversed under MPEP 2144.03. Applicant respectfully requests that the Examiner either cite references in support of this position, or provide an affidavit if the Examiner is relying on personal knowledge, as required by 37 C.F.R. § 1.104(d)(2).

Applicant also respectfully submits that these statements are also conclusory and based on subjective belief because the Examiner’s statements are analogous to the conclusory statements made by the Examiner and Board in the *In re Lee* case.

“With respect to Lee’s application, neither the examiner nor the Board adequately supported the selection and combination of the Nortrup and Thunderchopper references to render obvious that which Lee described. The examiner’s conclusory statements that ‘the demonstration mode is just a programmable feature which can be used in many different devices for providing automatic introduction by adding the proper programming software’ and that ‘another motivation would be that the automatic demonstration mode is user friendly and it functions as tutorial’ do not adequately address the issue of motivation to combine. This factual question of motivation is material to patentability, and could not be resolved on subjective belief and unknown authority. It is improper, in determining whether a person of ordinary skill in the art would have been lead to this combination of references, simply to use ‘[use] that which the inventor taught against its teacher.’” *W.L. Gore V. Garlock, Inc.*, 721 F. 2d 1540, 1553, 220 USPQ 303, 312-13 (Fed. Cir. 1983).” *Lee*, at 1343, 1344.

Reconsideration and allowance of claims 36, 38-42, 44-47, 49-50, 58-60 & 62-65 are respectfully requested.

Furthermore, Applicant traverses the rejections because the Office Action fails to consider the claims a whole. In obviousness determinations, the question is whether the claimed invention as a whole would have been obvious, and not whether the differences themselves would have been obvious. *Stratosflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530 (Fed. Cir. 1983). Furthermore, the suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not in applicant’s disclosure. *In re Vaeck*, 947 F.2d 488 (Fed. Cir. 1991) (Emphasis Added). Applicant submits that the Office Action incorrectly fails to address the claims as a whole. The rejected claims, when properly considered as a whole, provide an invention which is not taught in the cited patents.

Applicant reserves the right to further traverse the statements on pages 4 and 5, for example, under MPEP 2144.04 among other things. Applicant is expressly not admitting to any assertions made in the Office Action.

Reconsideration and allowance of the claims are respectfully requested.

Reservation of Right to Swear Behind References

Applicant reserves the right to swear behind any references which are cited in a rejection under 35 U.S.C. §§102(a), 102(e), 103/102(a), and 103/102(e). Statements distinguishing the

AMENDMENT AND RESPONSE UNDER 37 CFR § 1.111

Serial Number: 09/649827

Filing Date: August 29, 2000

Title: METHOD FOR ATTACHING A SEMICONDUCTOR DIE TO A SUBSTRATE

Page 13

Dkt: 303.527US2

claimed subject matter over the cited references are not to be interpreted as admissions that the references are prior art.

CONCLUSION

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney, Andrew R. Peret at (262) 646-7009, to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743

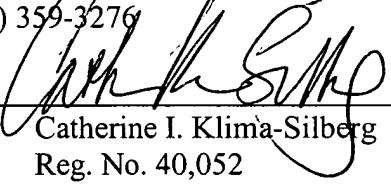
Respectfully submitted,

EDWARD A. SCHROCK ET AL.

By their Representatives,

SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.
P.O. Box 2938
Minneapolis, MN 55402
(612) 359-3276

By


Catherine I. Klima-Silberg
Reg. No. 40,052

Date Oct 2, 2003

CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 2 day of October, 2003.

Name

Gina M. Uphus

Signature

